State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawaii 96813

September 9, 2011

Board of Land
and Natural Resources
Honolulu, Hawaii

Request for Approval of Special Activity Permit 2011-79 for
Dr. Sam Kahng, Hawaii Pacific University,
to Conduct Deep Water Research on State Regulated Corals off West Hawaii Island

The applicant proposes to conduct research on deep-water benthic communities of precious and stony corals to study their responses to episodic disturbances and recovery. The Hawaii Undersea Research Lab (HURL) will use a submersible to study corals on top of and adjacent to lava flows in deepwater (3,000') off West Hawaii. The study includes the take of regulated corals to enable positive identification and age relative to the known age of the lava flow.

RECOMMENDATION:

Based on the Departments exemption determination (attached) and the application and record in this matter, the Board DECLARES, FINDS, and DECIDES:

1) That the actions covered by this permit will have little or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment;
2) To delegate the Chairperson to sign the declaration of exemption on behalf of the Board, for purposes of recordkeeping requirements of chapter 343, HRS, and chapter 11-200, HAR; and
3) To authorize and approve, with stated conditions, the proposed special activity permit.

Respectfully submitted,

ROBERT NISHIMOTO
Program Manager

APPROVED FOR SUBMITTAL:

WILLIAM J. AILA, JR.
Chairperson

ITEM F-2

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

August 26, 2011

TO: Division of Aquatic Resources File

THROUGH: William J. Aila, Jr., Chairperson

FROM: Robert Nishimoto, Aquatic Biologist
Division of Aquatic Resources

SUBJECT: Declaration of Exemption from the Preparation of an Environmental Assessment under the Authority of Chapter 343, HRS, and Chapter 11-200, HAR, for a Special Activity Permit to Dr. Sam Kahng, Hawaii Pacific University.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title: Special Activity Permit to Dr. Sam Kahng, Hawaii Pacific University to take regulated precious and stony corals for the purpose of studying deep-water benthic communities.

Permit Number: SAP 2011-079.

Project Description: The Special Activity permit, as described below, would allow for the take a limited number of samples of precious and stony corals to study deep-water benthic organism response to episodic disturbance and recovery. The HURL deep submersible will be the platform for this study on community structure on a lava flow of known age compared to adjacent, "undisturbed" habitat of much older age. At each station (i.e., lava flow) surveys will be conducted at strategic, fixed depth contours (e.g., 90 m for mesophotic corals, 400 m for precious corals, 1000 m for cold water corals) to study how communities change with depth. Constant depth contour transects will be surveyed, and video data analysis will be used to characterize community ecology (i.e., species richness, species diversity, % live benthic cover, density, and size-frequency distribution of a key organism at each depth contour).

Comparing the estimated age of the lava flow with the amount of growth on the flow will help to give a better estimate of the age of the corals growing on the flow. Samples are needed to determine species and age to better understand precious coral life history and growth rates.

Consulted Parties: Dr. William Walsh, DAR - Kona

Exemption Determination: After reviewing § 11-200-8, HAR, including the criteria used to determine significance under § 11-200-12, HAR, DLNR has concluded that the activities under

this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit have been evaluated as a single action. Since this permit involves the same methodologies conducted during the permit period, the categorical exemption determination here will treat all planned activities as a single action under § 11-200-7, HAR.

2. The Exemption Class #5 Scientific Research with no Serious or Major Environmental Disturbance, Appears to Apply. § 11-200-8(a)(5), HAR, exempts the class of actions that involve "basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource." This exemption class has been interpreted to include removal of live samples, such as those being proposed.

In addition, the activities under consideration are exempt under Exemption Class #5, Exempt Items #3, #4, and #5, respectively, which include "placing recording devices in the field to determine animal movement," as well as "wildlife and game surveys, censuses, inventories, studies…" and "...marine surveys and research activities…." Department of Land and Natural Resources, Exemption List for the Division of Fish and Game, approved January 19, 1976.

The proposed activities here appear to fall squarely under the exemption classes identified under §11-200-8(a)(5), HAR, and as described under the 1976 exemption list class items. As discussed below, no significant disturbance to any environmental resource is anticipated. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if "the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment." § 11-200-8(b), HAR. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment (§ 11-200-12, HAR).

Significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the environment will not be significantly affected. All activities will be conducted in a manner that does not diminish marine resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects.

Since no significant cumulative impacts or significant impacts are anticipated, the categorical exemptions identified above should remain applicable.

4. Overall Impacts will Probably have a Minimal or No Significant Effect on the Environment. Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all activities covered by this permit will be carried out with strict safeguards (see attached permit) for the natural, historic, and cultural resources of the area.

5. Overall Impacts will Probably have a Minimal or No Significant Effect on Particularly Sensitive Environment. Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit.

Conclusion. After reviewing the historical and factual situation on this matter, the general and special terms of the Permit, and the potential benefits and impacts of the proposed activities, as provided under HRS §§ 343-5 and 6, HAR §11-200-8, it is hereby determined that the project will probably have minimal or no significant effect on the environment.

Therefore, the Department determines that this project is exempt from the requirement to prepare an Environmental Assessment under HRS chapter 343.

_____ _____

William J. Aila, Jr. Date
Chairperson,
Board of Land and Natural Resources

Table 1. Select Big Island lava flows entering the ocean (from original proposal)

Historical lava flows selected for this study in bold font. Estimated submarine volume of lava flow from Lockwood and Lipman (1987). Select listing of previous peer reviewed studies and HURL dives associated with each lava flow.

Volcano	Location/flow name	Year	Age (years)	Est submarine volume (m^3 10^6)	Previous studies	Previous HURL dives
SW coast						
Mauna Loa	**S of Hookena**	**1950**	**60**	**70**	Grigg & Maragos 1974	
Mauna Loa	Milolii	1926	84	5	Grigg & Maragos 1974	
Mauna Loa		1919	91	100		
Mauna Loa		1887	123	10		HURL P5-389, P5-390, P5-391, P5-392
Mauna Loa	**Kealakekua**	**1877**	**133**	**7**	Moore and Fornari 1984; Wanless et al. 2006	M161-170, M288-290, PV-285, P5-500, P4-076, P4-077, P5-551, P5-552
Mauna Loa	**Waiahukini**	**1868**	**142**	**50**	Grigg & Maragos 1974	HURL P4-082, RCV221-222
NW coast						
Mauna Loa	Kiholo	1859	151	95		
Hualalai	Kaupulehu	1801	209			
Hualalai	Huehue	1800	210			
SE coast						
Kilauea	HI Volcano NP	2002-07	2-8			
Kilauea	Kalapana	1990-92	10-12			
Kilauea	Mauna Ulu	1970-73	37-40			
Kilauea	Kealakomo	1969	41		Grigg & Maragos 1974	
Kilauea	Kapoho	1960	50		Grigg & Maragos 1974	
Kilauea	Kehena	1955	55		Grigg & Maragos 1974	
Kilauea	Nanawale	1840	170			
Kilauea	Kapaoo Point	1823	187			
Kilauea	Malama-Ki	1790	220			
Kilauea	Heiheiahulu	1750	260			
Kilauea	Keauhou		370-520			
Kilauea	Kipuka Nene		770-1,020			
Kilauea	Kane Nui o Hamo		1,020-1,520			

Table 2. Proposed Dive Sites and coordinates

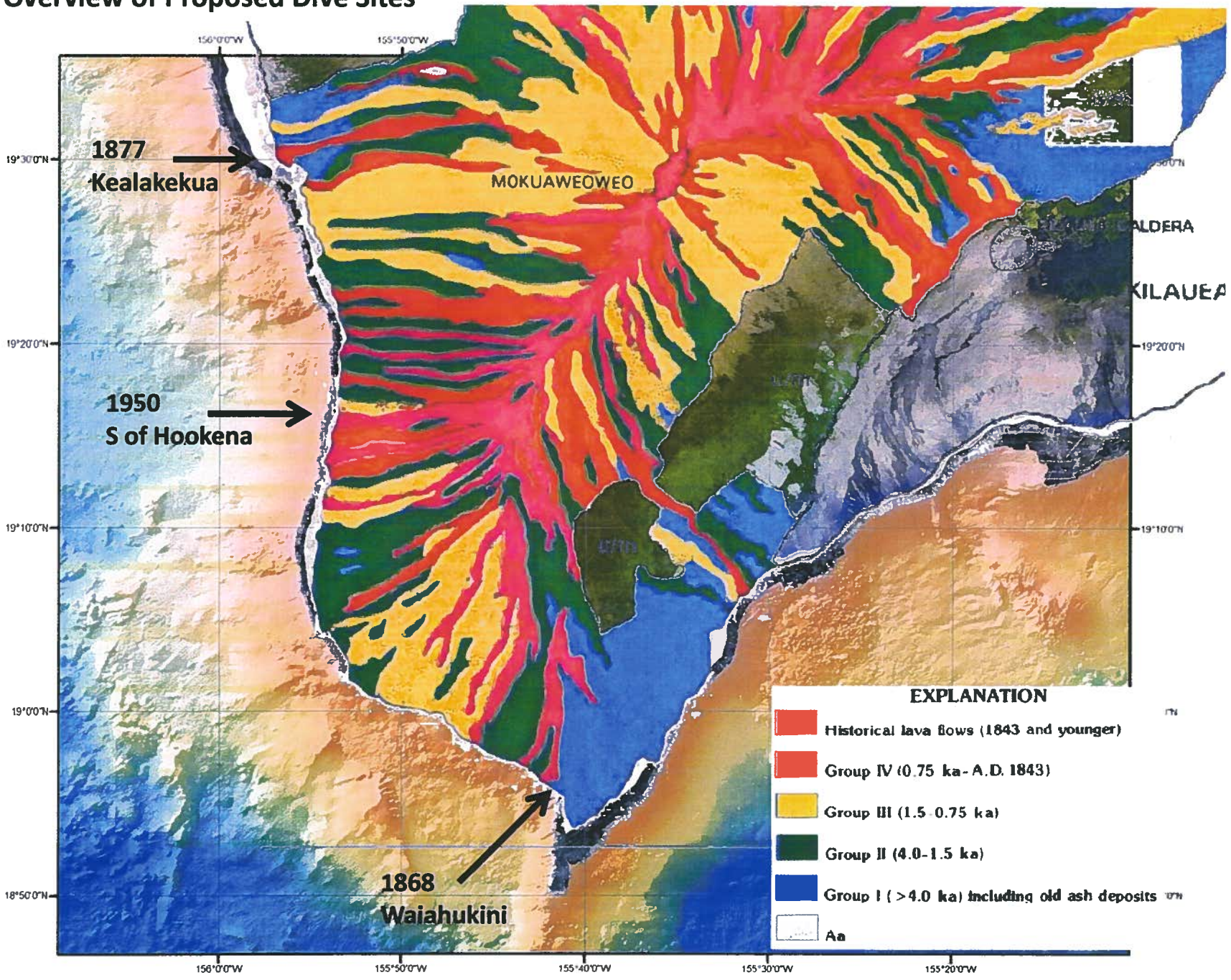
Table of proposed dive sties with GPS coordinates. Age of the substrata for each site denoted. Age of substrata underlying historical flows from F. A. Trusdell, unpublished data. Map for each general location illustrated in subsequent figures.

					Latitude			Longitude		
General location	Dive Site*	Age**	Latitude	Longitude	deg	m	s	deg	m	s
Kealakekua	1877A	133	19.46928	-155.94726	19	28	9.41	155	57	9.86
Kealakekua	1877B (backup)	133	19.45834	-155.94222	19	27	30.02	155	57	28.01
Kealakekua	Kaawaloa	~2000	19.47797	-155.95718	19	28	40.69	155	58	34.15
S of Hookena	Kaapuna--1950	60	19.26672	-155.90445	19	16	0.19	155	55	43.98
S of Hookena	Kipahoehoe	402	19.25596	-155.90714	19	15	21.46	155	55	34.30
Waiahukini	1868A	142	18.94337	-155.71285	18	56	36.13	155	43	13.74
Waiahukini	Kailikii	2330	18.93678	-155.70389	18	56	12.41	155	43	46.00

***Location of each dive site is labeled on the applicable map of each location**

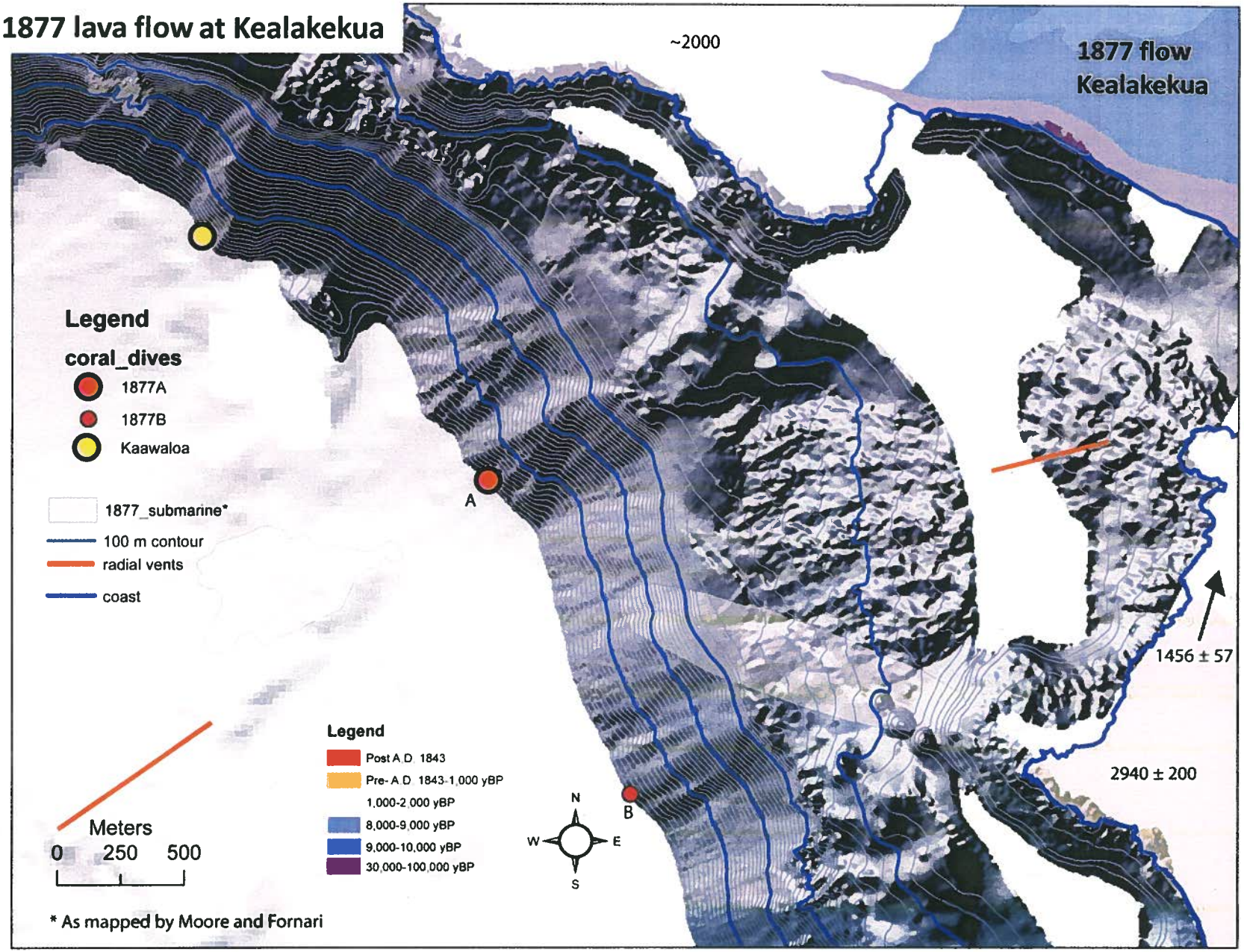
****Age of substrata underlying historical flows from F. A. Trusdell, unpublished data**

Fig. 1 Overview of Proposed Dive Sites



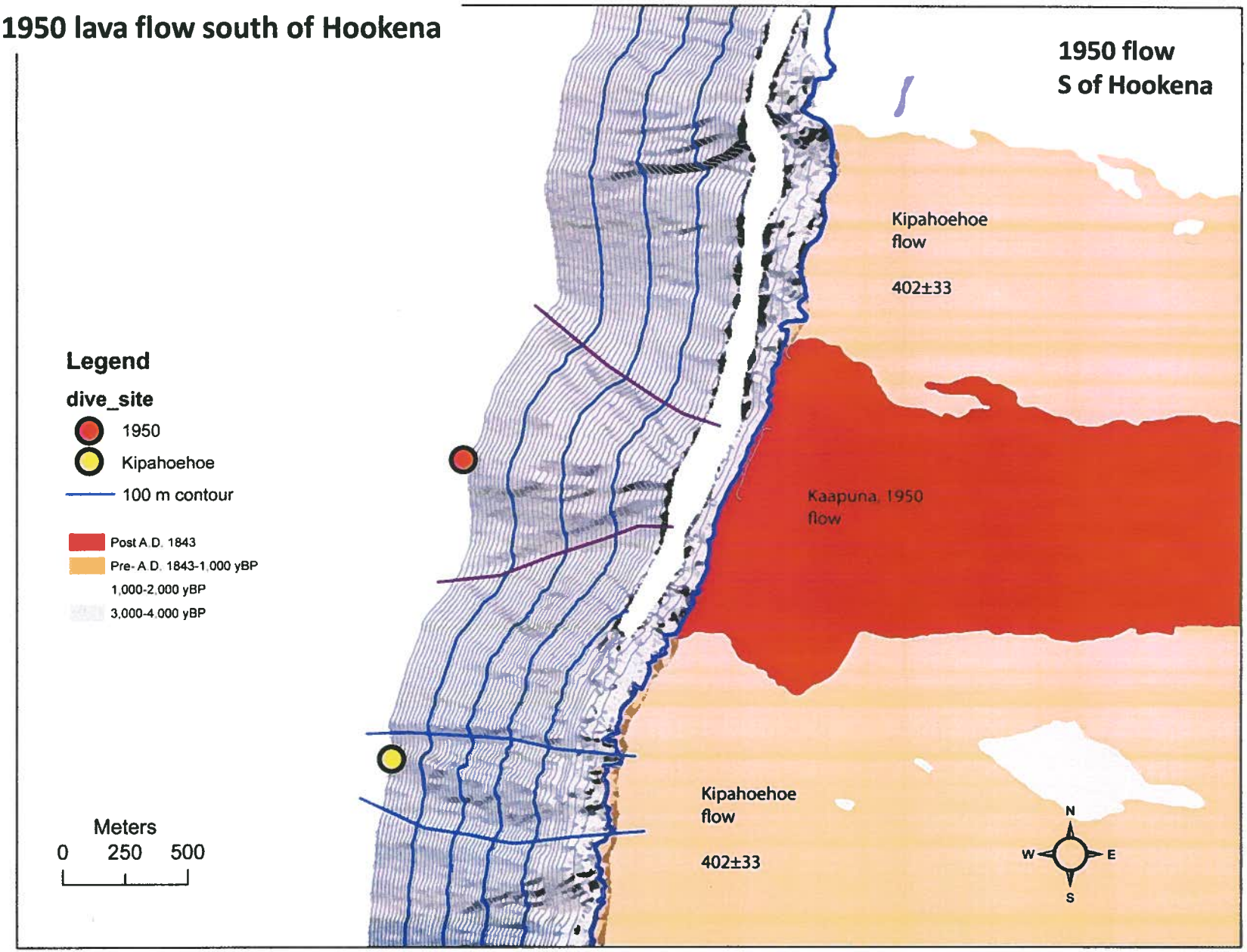
(modified from Lockwood and Lipman 1987)

Fig. 2 1877 lava flow at Kealakekua



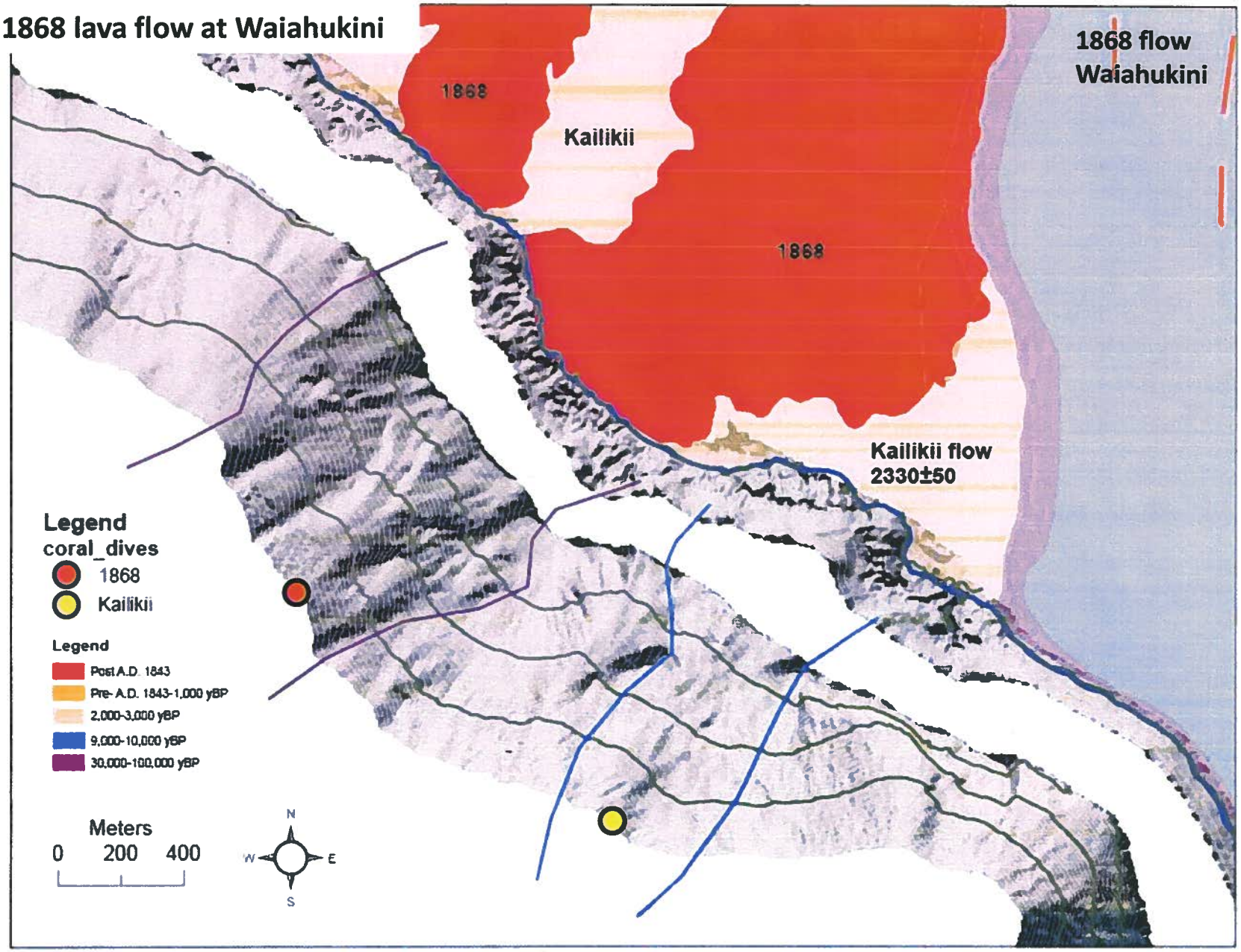
Map of 1877 flow at Kealakekua. Dark blue contour indicates shoreline. Light blue bathymetry contours are in increments of 100 m while thin white bathymetry contours are in increments of 20 m. Dark red circle A denotes proposed dive site on the 1877 lava flow and yellow circle denotes proposed dive site off the 1877 lava flow. Dark red circle B denotes back-up dive site on 1877 lava flow further away from off flow site but also on a well defined section of submarine lava flow.

Fig. 3 1950 lava flow south of Hookena



Map of 1950 flow south of Hookena. Dark blue contour indicates shoreline. Light blue bathymetry contours are in increments of 100 m while thin white bathymetry contours are in increments of 20 m. Dark red circle denotes proposed dive site on the 1950 lava flow and yellow circle denotes proposed dive site off the 1950 lava flow. Lines perpendicular to shore outline well defined debris cones of submarine lava flows adding certainty to the substrate age.

Fig. 4 1868 lava flow at Waiahukini



Map of 1868 flow at Waiahukini. Dark blue contour indicates shoreline. Light blue bathymetry contours are in increments of 100 m while thin white bathymetry contours are in increments of 20 m. Dark red circle denotes proposed dive site on the 1868 lava flow and yellow circle denotes proposed dive site off the 1868 lava flow. Lines perpendicular to shore outline well defined debris cones of submarine lava flows adding certainty to the substrate age.

Wanless et al. 2006
1950 lava flow south of Hookena

Figure 3. Acoustic backscatter image of Mauna Loa's western submarine flank near Kealakekua Bay overlain by outlines from the geologic map (Figure 5). Darkest colors represent areas of higher reflectivity (i.e., thinner sediment cover).

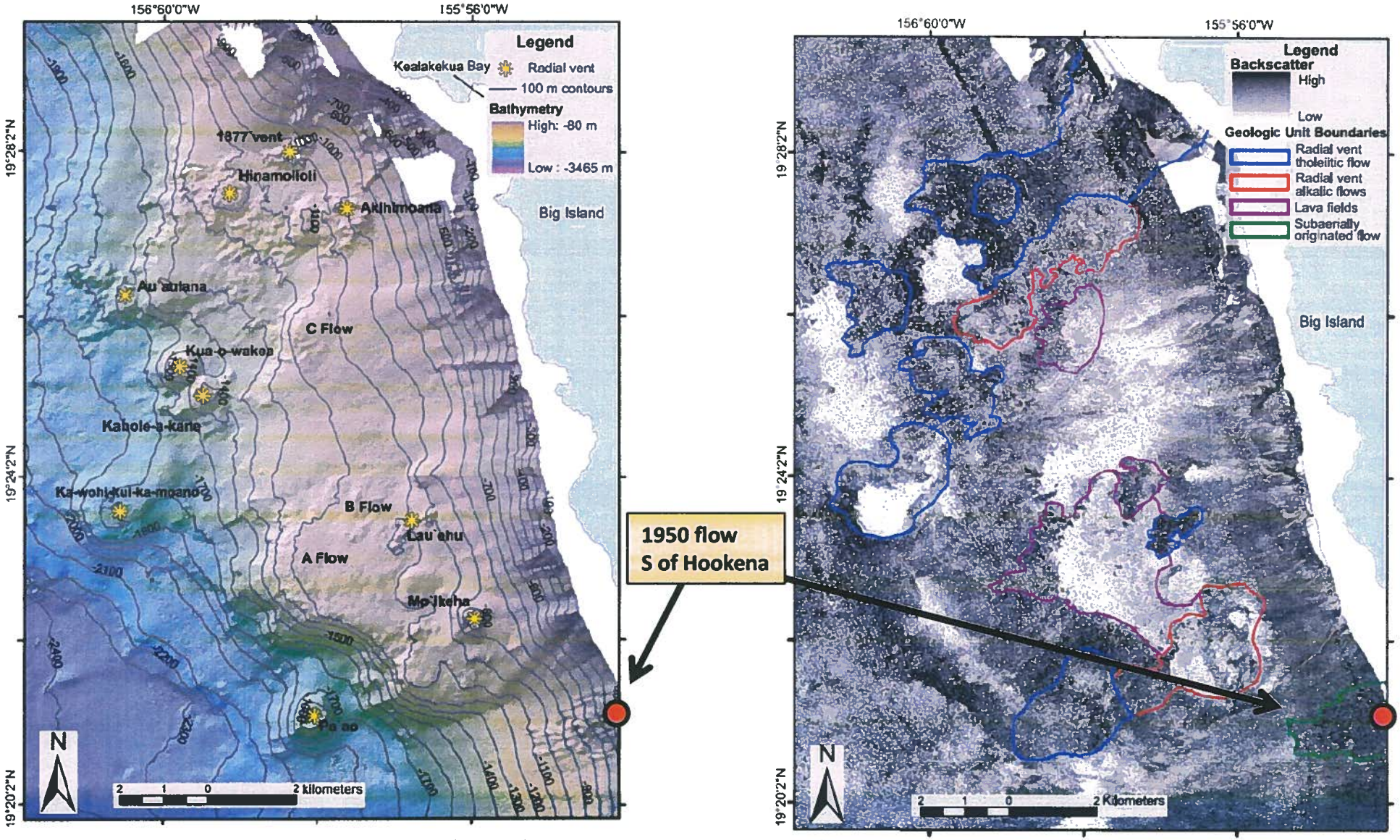


Figure 2. Bathymetry superimposed on a shaded relief image for Mauna Loa's western submarine flank near Kealakekua Bay. The locations of the 10 submarine radial vent cones are indicated by yellow asterisks. The contour interval is 100 m. Illumination for the shaded relief image is from the northwest. Processing of the data was done using MB-Systems [*Caress et al.*, 1996; *Guth et al.*, 1987; *Guth*, 2001] and GMT [*Wessel and Smith*, 1995]. Maps are projected in North American 1983 UTM zone 5 datum and have a spatial resolution of 25 m. ArcGIS software was used to produce this and other images of the study area.

(Wanless et al. 2006)

Wanless et al. 2006
1950 lava flow south of Hookena

Figure 6. Geologic map of Mauna Loa's western submarine flank near Kealakekua Bay. Stippled patterns are used to distinguish between two adjacent flows of a similar rock type. The west coast of the island of Hawai'i is shown in pale green. White regions were not surveyed. See text for details on how map was produced and legend for rock types.

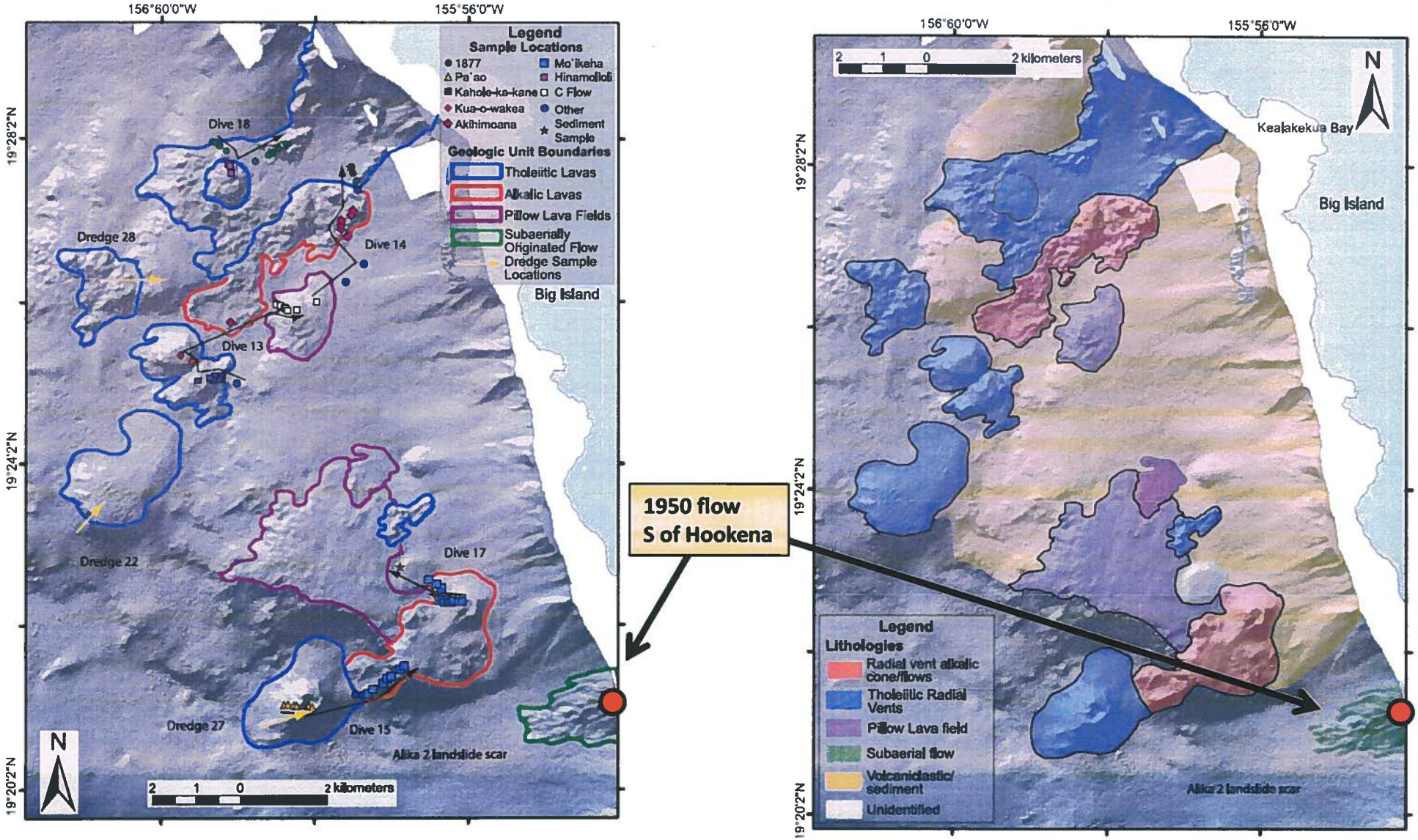


Figure 4. Shaded relief image of Mauna Loa's western submarine flank near Kealakekua Bay with illumination from the northwest. The locations of samples collected by JASON2 are shown with different symbols for each radial vent. Black lines indicate the direction of the dive lines. The locations of dredges taken in 1999 are shown with red lines.

(Wanless et al. 2006)

Moore and Fornari 1984

1877 lava flow at Kealakekua

Map of 1877 flow at Kealakekua modified to illustrate proposed dive sites. Dark red circle denotes proposed dive site on the 1877 lava flow and yellow circle denotes proposed dive site off the 1877 lava flow.

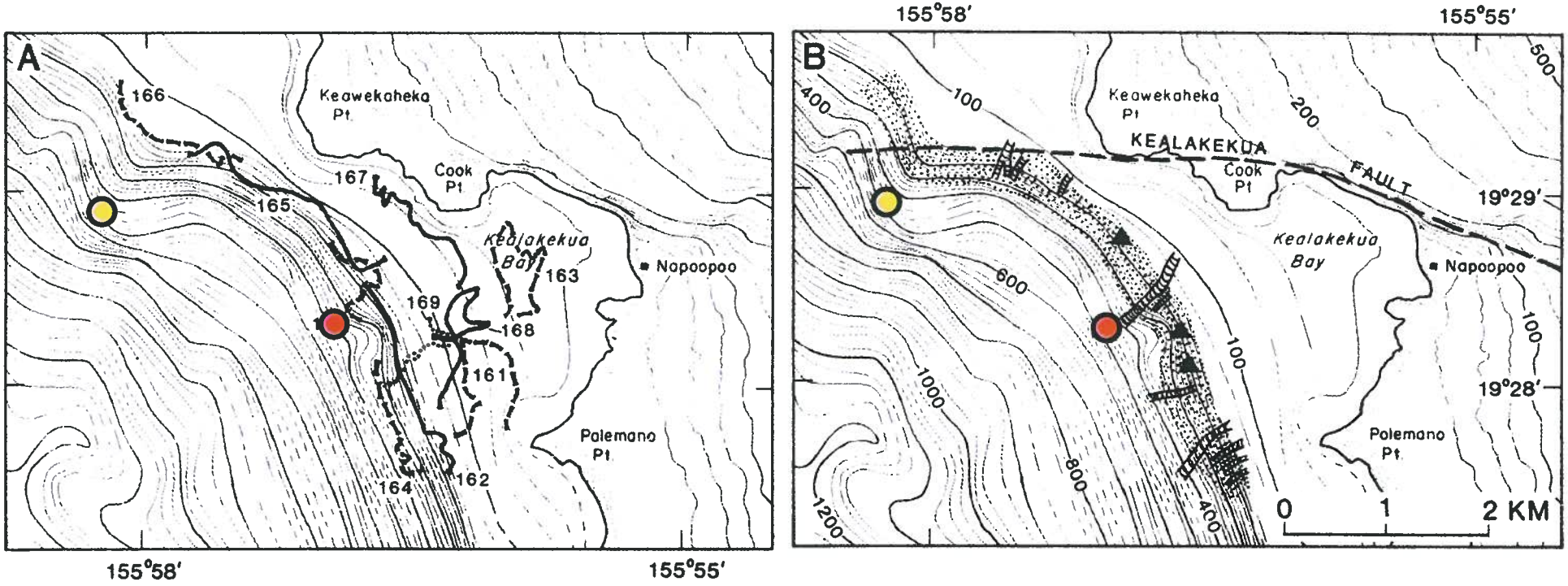


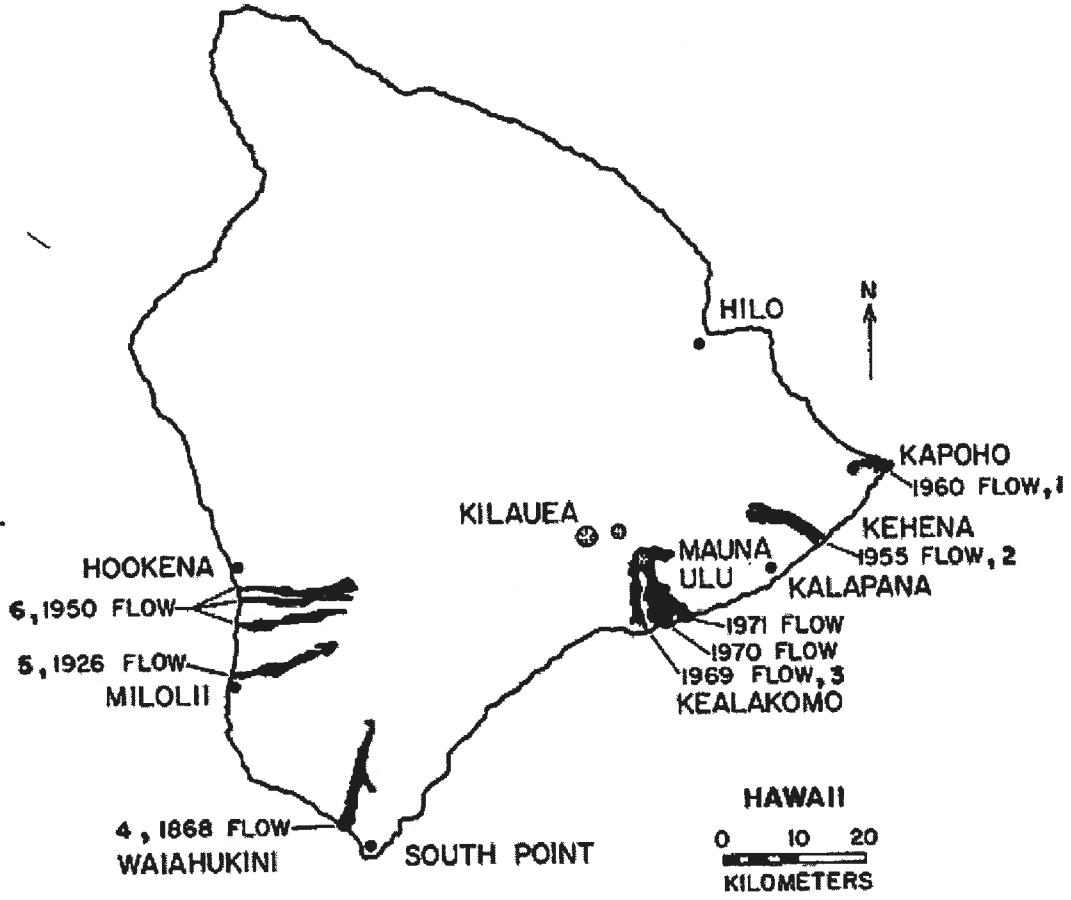
FIG. 2.—Topography and bathymetry of Kealakekua Bay area (bathymetry after Normark et al. 1978). Contour interval, 25 m. *A*. bottom tracks of numbered *Makali'i* dives, 1983. *B*. Ten lava flows (ladder pattern) drape exposed face of drowned coral reef (dotted). Triangles indicate location of dated coral samples 170-5, 162-3, 169-1 from north to south.

Grigg and Maragos 1974
Big Island historical lava flows previously studied in shallow water

TABLE 1. Sums of the monthly ranks comparing stations to exposure to sea and long period swell

Station	Sum monthly ranks: sea	Sum monthly ranks: swell	Total	Rank
Kealakomo 1969 flow	36.0	36.0	72	3
Kapoho 1960 flow	12.0	12.0	24	1
Kehena, near Kalapana 1955 flow	24.0	24.0	48	2
Hookena 1950 flow	68.5	69.5	138	6
Milolii 1926 flow	60.5	57.0	117.5	5
Waiahukini 1868 flow (near South Point)	51.0	53.5	104.5	4

FIG. 1. Map showing location of stations on the island of Hawaii. The most recent volcanic activity has been at Kilauea volcano at the Mauna Ulu crater, 19°22′ N, 155°13′W. Ranks of exposure to sea and swell are shown adjacent to dated flows.



State of Hawai'i
Department of Land & Natural Resources
Division of Aquatic Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawai'i 96813

SPECIAL ACTIVITY PERMIT
(SAP) 2011-79
Issued 08/26/11
Expires 08/25/12

The State of Hawaii BOARD OF LAND AND NATURAL RESOURCES ("Board") through its DEPARTMENT OF LAND AND NATURAL RESOURCES ("Department") hereby grants and issues a SPECIAL ACTIVITY PERMIT (SAP) 2011-79 ("Permit") to:

DR. SAM KAHNG ("Permittee")
Hawaii Pacific University
41-202 Kalanianaole Highway
Waimanalo, HI 96795
(808) 236-3562

For take of regulated precious and stony corals, subject to the numbers, sizes, and locations as listed in the table below;

COMMON NAME	SPECIES	LIMITS see Special Conditions	LOCATIONS see Special Conditions
Stony corals		Up to 2 per species, < 0.5m in diameter; except as listed under Special Conditions E.2.c	West Hawaii Island
Pink, Gold, or Black Precious corals	Genera *Corallium, Gerardia*, and *Antipathes*	Up to 2 per species, < 1m in height; see as listed under Special Conditions B	West Hawaii Island

This Permit authorizes the Permittee and assistants designated through this Permit to engage in activities otherwise prohibited by law, which TAKE, CATCH, POSSESS, TRANSPORT, OR KILL certain aquatic life from waters of the State, but subject to the conditions stated here.

This Permit is authorized pursuant to Hawaii Revised Statutes, § §171-6 and -7, §§187A-2 and -6, §188-68, §§190-1 and -4, other applicable laws, and the Hawaii Administrative Rules ("HAR") implementing these statutes.

This Permit is subject to the following terms and conditions.

CONDITIONS

Part I. GENERAL

A. This Permit is effective when the following processes have been completed.

1. Each assistant must be listed at the end of this Permit.

2. The Permittee and each assistant must read the Permit completely; acknowledge that he or she understands and agrees to abide by the conditions of the Permit, and sign both copies of the Permit as provided.

3. The Permit becomes valid when signed by an authorized representative of the Department and the Department returns one validated copy to the Permittee.

4. The Permittee agrees to notify the Division of Aquatic Resources ("Division") immediately of any change in assistants. Additional persons may be added as assistants in the manner provided in this Permit.

5. The Permittee agrees to obtain the Division's prior written approval before conducting any activity which would be prohibited if not authorized under this Permit (i.e. request in advance changes to permit conditions).

6. This Permit does not in any manner render the Department or the State of Hawai'i liable in any way for claims of personal injury or property damage which may arise or result from activity authorized by this Permit. The Permittee or all assistants agree to hold the Board and State harmless against any and all claims of injury, death or damage resulting from acts or omissions under this Permit.

7. This Permit conveys authority ONLY of the Department's jurisdiction over aquatic resources: The Permittee is and remains responsible for obtaining all other permission from other applicable authorities, including owners of and tenants of private lands; other divisions of the Department; other local, State and Federal agencies. This permit authorizes activities

involving aquatic organisms protected by Federal law only with appropriate Federal authorization.

8. The Permittee and each assistant are individually responsible and accountable for his or her actions while performing activities authorized by this Permit. The Permittee is also responsible and accountable for the actions of each assistant.

9. This Permit is not transferrable and not assignable to another person.

10. The Permittee or assistant must carry a copy of this permit on location while performing activities authorized by this Permit.

11. Authority granted by this Permit ends on the "Expiration Date" on the first page of this permit; within one month of the expiration date, the Permittee agrees to return this permit to the Division with a Collecting Report completed for the full duration of this permit, reporting results of all activities under this permit in the form provided with this permit.

12. The Permittee and assistants agree to provide access to data obtained under this permit upon request of the Division, to provide the Division one copy of each report prepared with such data and published for distribution, and to allow Department staff to inspect on Permittee's premises organisms collected under this permit.

13. Violation of any condition of this permit by any person may be cause for immediate revocation of the permit; the person responsible may be subject to penalty as provided by law; violation may be cause also for denial of future permit applications.

14. The Permittee may request change of a condition or conditions of this permit by writing to the Division; if approved by the Department, the Division will issue an attachment ("Amendment") which shall become part of, and amend terms of, this permit. The Department may impose additional conditions to, or restrictions of, this permit by written notice to the Permittee.

Part II. SPECIAL CONDITIONS

A. General Statement: This permit authorizes collecting, killing, transport, and possession of live stony corals, except as provided in E.2.c below, and precious corals, listed in the table on page 1 and B below, and subject to the other conditions of this permit.

B. The authorized take of precious corals are as follows:

1. Black coral collection of 2 samples of each of three species; any size;

2. Gold coral collection of 2 samples of one unidentified species; 1 large (10 inches+) sample and 1 small (<10 inches) sample;

3. Pink coral collection of 2 samples from each of 12 species; and

4. Collection of 2 samples from each colony of unidentified species for identification and age.

C. The samples and colonies taken from West Hawaii island will be from a manned submersible. The samples and colonies collected may be transported out of State to Dr. Stephen Cairns, National Museum of Natural History, Smithsonian Institution for archiving.

D. Locations: Collecting activities under this permit is limited to waters of the State of Hawai'i as listed in the table on page 1.

E. Activities: Activities under this permit shall abide by the following conditions.

1. Collecting and transport activities under authority of this permit must be supervised directly, on site, by either the permittee or their appointed representative (who must be a signatory of this permit).

2. No extractive or impact-causing activities will be done on (or immediately adjacent to) any intact, attached coral colony measuring larger than 1 m x 1 m x 1 m. Specific efforts will be made to avoid damage to any large colonies of living coral.

3. No coral species other than those listed on this permit will be collected or impacted by any activities conducted under this permit.

4. The Division may require the Permittee to accommodate the presence of an observer specified by the Division during permitted activities. A record will be kept of each collection comprising specific location (GPS), date, species and amount collected. Photo-documentation will be made prior to and immediately after collection. These records will be made available to the Division upon request.

F. Notice:

1. Collecting generally - the Permittee must give notice, in form specified by the Department, to DAR (808-587-0100) and to the Department's Division of Conservation and Resources Enforcement (DOCARE, 808-587-0076), at least 2 hours prior to initial commencement of any series of collection activities taken place under this permit.

2. Mass mortality - the Permittee must notify DAR O'ahu (587-0100) by the next State work day of

    a. Any instance of major damage caused to coral or other marine natural resources as a result of collection or other research activities conducted under this permit.

    b. Fragmentation - This permit provides for collection and re-attachment of live coral and does not provide for selective breakage of portions of a live colony (fragmentation) in the field. Fragmentation in such a manner as does not result in any additional harm to the remainder of the colony may be allowed with prior discussion and written approval of the Division.

    c. Rare Species - The following Porites species require special permission from the Division prior to collection under this permit: Porites pukoensis, Porites duerdeni, Porites studeri. The following Montipora species require special permission from DAR prior to collection under this permit: Montipora dilitata. The following Pocillopora species require special permission from DAR prior to collection under this permit: Pocillopora ligulata, Pocillopora molokensis.

3. Gear and Methods: Use of any chemical substances pursuant to Section 188-23, Hawai'i Revised Statutes, electrical shocking devices, or explosives remains expressly prohibited.

4. Use of Organisms: Organisms collected under authority of this permit may not be used for personal consumption or sale; organisms collected under this permit may not be traded, bartered or loaned to other individuals, institutions or entities;

    a. Written approval must be obtained from the Division prior to

        i. Purchasing or any other acquisition of regulated organisms (regardless of origin) alive from any other party,
        ii. Transporting any live organism (regulated or not) between islands, or outside of the Barbers Point area, island of O'ahu.

iii. Exchanging or donating any organisms collected under this permit to any other person, party or organization;

b. The permittee may not convey in any fashion (including, but not limited to, selling, trading, or giving) any coral (live or dead) to any person or party in Hawai'i that does not already have a permit from the Department authorizing possession of same and without direct, written approval from the Division;

5. Annual Report: Upon expiration, the permittee must provide to the Division a final written report summarizing results of collecting activity carried out under this permit and the analysis of the data:

a. The annual report should provide a written explanation as to how the collection (and other activities) of a fully-protected marine species is benefiting the State of Hawai'i in general and specifically, the improved management of the species.

b. The final report must describe, in form specified by the Department,

i. Names and total estimated numbers/quantities of all specimens collected under this permit,

ii. Their dispositions (e.g. on display; released/returned to the ocean; died),

iii. Description of any additional benefits beyond the scientific analysis provided to the Division or the public during the period;

c. An inventory of organisms (dead or alive) present at the facility or with the permittee the end of the report period, in form acceptable to the Division, must accompany the annual report;

d. The annual report is due at the Division's Honolulu office within one calendar month after expiration of the permit or as otherwise instructed by the Division, and is required prior to any renewal of this permit.

VALIDATING SIGNATURE

WILLIAM J. AILA, Chairperson
Board of Land and Natural Resources

cc: DLNR Division of Conservation and Resources Enforcement

ACKNOWLEDGING SIGNATURES

By signature below, I attest that I have read and understand the General and Special Conditions of Special Activity Permit SAP 2011-79 and that, further, I agree to comply with all of these conditions when collecting under authority of this permit.

_____

DR. SAM KAHNG
Primary Permittee

Designated Assistants

Sign Type name Kristen Pylman	Sign Type name
Sign Type or print	Sign Type or print
Sign Type or print	Sign Type or print
Sign Type or print	Sign Type or print